DOCUMENTS EXPEDITING PROJECT

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JULY 1 THROUGH DECEMBER 31, 1953

OF THE

ASSISTANT SECRETARY OF DEFENSE

ON

DEFENSE CATALOGING AND STANDARDIZATION

In Accordance With Section 8 of Public Law 436,
82d Congress

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LETTER OF TRANSMITTAL

ASSISTANT SECRETARY OF DEFENSE,
Washington 25, D. C., January 29, 1954.

Hon. DEWEY SHORT,
Chairman, Committee on Armed Services,
House of Representatives.

DEAR MR. SHORT: As prescribed by Public Law 436, there is transmitted herewith the third report on the Department of Defense cataloging and standardization programs. This report covers the period from July 1 to December 31, 1953.

In accordance with section 8 of Public Law 436, reports on these two programs have been combined into a single report.

Sincerely yours,

C. S. THOMAS.

SEMIANNUAL REPORT ON DEFENSE CATALOGING AND STANDARDIZATION

July 1 Through December 31, 1953

CATALOGING PROGRAM

The progress of the defense cataloging program has been most satisfactory. The greatest single accomplishment apart from continuing the vigorous development of cataloging tools for item identifications has been the analysis by the military departments of their logistics systems and their development of master plans and concepts for the integration of and conversion to Federal catalog data. These plans were submitted in September 1953, and after careful analysis to determine that the full objectives of the program would be achieved in the most practicable manner, these plans were approved.

We have reoriented our thinking to give paramount consideration to the various logistic functions which catalog data must serve. We are readjusting our policies wherever necessary to insure that the data we develop will be useful tools for supply management.

Based upon a complete internal inventory of the production status of item identifications and actual departmental capabilities, we scheduled in December 1953 the next 6 months' production. We anticipate the production of 300,000 completed item identifications by the end of June 1954. This will be in addition to the 530,000 Federal item identifications completed in the 18 months since the passage of Public Law 436. Development of the common language product of single identification which is now 26 percent complete in relation to our present estimate of the total job will be 41 percent complete by the end of June 1954.

We are conducting a joint analysis with the military departments of the remaining workload and ascertaining work measurement factors. In March 1954 we will complete the schedule of production for the entire identification program. Then in April 1954 we shall develop a completed schedule for conversion by the military departments to the use of the Federal catalog data. These conversion schedules will be compatible with the complete identification schedule developed in March. In the meantime, conversion is now in process for all items of clothing, medical, and fuel, and these areas will be completed by June 30, 1954 in all departments.

We must emphasize, however, the complexities and far-reaching effects of the changeover to the use of Federal catalog data. It must be conducted with utmost care to insure that the supply support of our military missions at home and throughout the world will not be impaired or endangered during the transition period.

Public Law 436 envisions the publication of a single Federal supply catalog in book or volume type. Our experience to date in publish-

ing such catalogs has indicated exceedingly limited use for them. Supply management data, supply practices, and material usage vary between departments because of assigned missions and operational requirements. Based on logistics requirements of the military, the supply publications must in many cases contain information such as allowances, storage and issue data, availability status, procurement control data, preservation instructions, etc. These supply logistic functions go far beyond the scope of uniform identification. For maximum flexibility and economy each bureau, service, or command maintains its file of Federal item identifications in card form. From this card file they obtain the uniform item identification data necessary for inclusion in operational manuals. We, therefore, believe that the wholesale publication of book-type catalogs at this time is costly and unusable. Book-type operating catalogs should be published by each department tailored specifically to its logistics mission. In each such catalog, the Federal identification data will be the only identification used.

To assure ourselves that the cataloging program is sound, that it is headed in the right direction, that it is being conducted in the most effective and expeditious manner, we obtained from industry the services of several eminently well-qualified consultants who conducted individual surveys. These men are Mr. Robert W. Koch, director of purchasing, Firestone Tire & Rubber Co.; Mr. G. W. Cunningham, who headed the Sears, Roebuck cataloging program for many years; and Mr. J. L. Skelton, in charge of the General Electric Co.'s cataloging program.

These men have fully endorsed the cataloging program and have confirmed our belief that it is sound and practical. They have also confirmed that the people engaged in this complex undertaking in the military departments and in the Office of the Secretary of Defense are highly qualified and are performing their tasks effectively.

We are dedicated to the most effective use of this single supply language throughout our military economy. Therein accrue the benefits. It is our intention to see that no benefit that may be realized through the use of this catalog data in military supply operations will be overlooked.

The statistics required by section 9 of Public Law 436 are shown in appendix A.

STANDARDIZATION

The standardization program has progressed along the lines outlined in previous reports.

Considerable emphasis has been placed on the elimination of obsolete, duplicating, overlapping, and unneeded items of supply. As indicated in appendix B–1, 44,117 items have been eliminated from the supply systems. These reductions have taken place in many varied fields—e. g., relay rail, from 27 to 3; dry batteries, from 400 to 240; cranes and shovels, from 112 to 66; cross-recessed screws, from 7,080 to 3,360; household furnishings, from 172 to 96. Savings from this type of simplification will be reflected in every function of supply.

Along with the type of standardization described above, engineering studies leading to the reduction in the variety of fast-wearing parts requiring frequent replacement continues to show progress. In addi-

tion to the standardization achieved in the 3- to 4-inch bore size of internal-combustion engines which was mentioned in previous reports, further progress has been made in the standardization of fast-wearing parts in the 2- to 3-inch and 4- to 6-inch bore sizes. Standard parts in these size ranges are now undergoing tests which should be completed by the end of this fiscal year. Specifications and standards based on the results of these tests should be available and ready for use in procuring the new standard parts by January 1, 1955. In addition to the fast-wearing parts undergoing test, a number of standard interchangeable accessories for the standard internal combustion engines such as generators, air cleaners, oil filters, and starting motors will be placed on test in the near future.

In addition, a detailed study leading to recommendations with respect to standardizing the fast-wearing parts of diesel engines is presently under way in conjunction with the industries affected. It is expected that this study will result in the developing, testing, and adoption of standards for some of the fast-wearing parts of diesel engines.

It is important to understand that the development of standard parts is a long-range engineering analysis and development program, the results of which considerably simplify the logistics task of supporting these equipments in the military supply systems. It is also important to understand that these studies are carried on with the closest consultation and assistance of industry so that the resulting standards are susceptible of manufacture by the basic tooling existing in industry. The economies which result from standardization of this type are so important that our program is being adjusted to include additional areas where this type of engineering study is warranted.

A standard shoe last for the men's oxford has been established, and will replace three existing lasts. This will permit a reduction in the types of lasts from 726 to about 200. Continuing studies and tests, aimed at even further reductions, are in progress. Future procurements of lasts for the military dress shoe will be restricted to this standard last. Present stocks of lasts will be utilized until such time as it is economically feasible to dispose of them.

In addition to the standardization of the men's oxford shoe last, four existing specifications for shoes to be made on this last have been combined into a single specification for use by all services. This action has accomplished a reduction in the type of shoes from 5 to 3 (russet, black, and mahogany).

A new program for the issuance of a series of supply and logistics handbooks for the use of the designers and specifications writers has been established. These handbooks, developed by the military departments in coordination with industry, describe industry practices and interchangeability, substitutability, and application of materials. They are aimed at eliminating the possibility of having too high a quality of material specified or of specifying kinds and grades of materials when more abundant or cheaper kinds or grades will do the job. Because of the economic importance and wide application of lumber and lumber products, and of steel, the first of the handbooks covered these basic commodities. The close cooperation of industry in the preparation of these handbooks is already resulting in better Government-industry relationships and understandings.

We are aware of the need for increased emphasis in our standardization work on the adoption of commercially available items in every instance where they meet military requirements.. The savings possible through use of commercial products are vividly illustrated by the adoption by the Quartermaster of the Army of a commercial box locker in lieu of a specially designed military trunk locker. This action resulted in an estimated saving of $7,605,000 over the years 1951–53. Adoption of commercial packaging for sensitized photographic materials resulted in an annual savings of $50,000 to the Bureau of Aeronautics.

A parallel need is a program which will lead to the adoption in the maximum feasible degree of commercial and industrial standards. The adoption of these standards will serve to simplify the design problems of the military and tend to gear the military requirements to the production resources available to it.

Emphasis has continued on the importance of presenting a single set of uniform requirements to industry. These result not only in economies in procurement but also in the handling, use, and maintenance of materiel in the military supply systems. Standardization of design likewise offers significant economies. For example, Bureau of Ships (Navy) has standardized on forging die shanks, notches, and dowels for contract and shipyard use. The Bureau of Ships estimates this will result in a savings of $750,000 per annum, and will save an additional $2 million in mobilization through a reduction in requirements of 7,200 dies. This program has such great possibilities of savings that it is being extended to include all services.

Data required by paragraph 10 of Public Law 436 are attached as appendix I.

Examples of standardization accomplishments during the period of this report are contained in appendix II. While these examples are typical and intended to show the degree of progress, to avoid making this report unduly lengthy, they are not a complete record of accomplishment.

We believe that standardization is a fertile field for greater efficiency and economy, and we are taking steps to give increased impetus to this program. We are confident that subsequent reports will show more significant achievements.

INSPECTION

The Department of Defense inspection program is directed toward greater improvements in material inspection to assure more adequate and uniform results at lower cost and with fewer Government personnel and facilities.

The potential benefits from a more efficient inspection program are apparent in the light of the facts that procurement inspection in the three military departments during 1953 involved the following:

(*a*) Approximately $30 billion worth of procurement in the United States;

(*b*) Approximately 35,000 suppliers' plants in all parts of the United States;

(*c*) Approximately 26,358 Government inspection personnel including military and civilian; and

(*d*) Inspection cost of approximately $160,663,000 at the rate of about one-half of 1 percent of each procurement dollar expended.

Basic guidance designed to assist the military departments in their continuing efforts to improve the effectiveness of their inspection services was issued during the reporting period. This directive stated the basic policies governing military inspection activity and identified the objectives of the program as the assignment of all military inspection at a plant to a single military inspection activity, and the development and implementation of uniform inspection procedures, methods, and practices.

Inspection improvements achieved during period July 1–December 31, 1953

The inspection program has been phased to direct immediate attention toward the objectives most productive in monetary and personnel savings. First, attention was directed toward obtaining assurance that all military procurement inspection at any one plant is conducted by a single military inspection activity. This was necessary to eliminate the overlap and duplication resulting from individual inspection assignments made by 14 different military inspection organizations. Frequently, several military inspection activities would be simultaneously conducting inspection in the same plant, with resultant inefficiency and criticism from industry, the public, and Congress. Out of a total of approximately 35,000 plants in the United States supplying material to the military departments, there are presently less than 8 percent of such plants where more than 1 military inspection activity is conducting inspection. Negotiations are being accelerated to assign the remaining plants to a single inspection activity. To assure that only one military inspection activity is serving a single plant, a reporting system has been developed which will indicate those plants where duplication exists so that prompt corrective action can be instituted.

Receiving inspection at military depots and supply activities has been surveyed, resulting in appropriate departmental administrative action in bringing about changes where necessary to improve the effectiveness and efficiency of this operation. The survey revealed that many small purchases of less than $1,000 and purchases involving standard commercial material required inspection at source of supply or manufacture when, in reality, such material could be inspected at destination quite adequately and more economically. Necessary administrative action has been instituted in each department to provide for destination inspection in every instance possible where small purchases and commercial material is involved. Similar action has been instituted in each department to enable receiving activities to handle increased inspection workload at destination with very little, if any, increase in personnel. Further, by removing such inspection workload from field activities of the military inspection services, proportionate reductions in personnel should be realized.

Several important achievements have been made toward the development and implementation of uniform inspection procedures, methods, and practices. Typical achievements are the preparation of a Handbook for Use in the Planning and Administration of Sampling Inspection and a Manual for the Preparation and Distribution of Inspection and Receiving Reports. These documents are now being

circulated for approval of the military departments and should be released in the first few months of 1954.

The most modern inspection concepts are being adapted to military inspection wherever possible. In this connection, the standard variables sampling plan is the latest development of a statistical inspection method which has been developed by the armed services in conjunction with Stanford University. Inspection by attributes is inspection wherein the item is classified as simply defective or nondefective; while an inspection by variables of quality characteristics is described in terms of its position inside or outside the specification limits. Thus, inspection by variables provides, in addition to the classification of the number of items conforming or nonconforming, the degree of conformance or nonconformance to specification requirements. Statistical extension of the degree of conformance permits a substantial reduction in sample size with no loss of quality assurance to the Government.

In connection with the item contained in the last report (p. 5) concerning instructions issued to the three departments to provide standardized sampling inspection procedures and acceptance standards in military specifications, it can now be reported that gratifying results have been observed in the review of newly published specifications. New specifications are providing more inspection guidance with more uniform acceptance requirements.

In order to obtain the maximum benefit from the use of modern sampling, inspection, and test methods, the three military departments have established training programs for inspectors which provide the necessary indoctrination in these new concepts and practices. Training courses developed by a department are made available to inspectors of the other military departments. Such training is essential to provide the best service to industry and the Government.

In November 1952, complete responsibility for petroleum procurement inspection was assigned to a single military department in designated geographical areas. Since that time, the number of procurement inspectors, including clerical personnel, has been reduced from 261 to 200. Greater efficiency has resulted from the elimination of duplication and cross travel among these inspectors.

Typical examples of savings and achievements made by each department in the field of inspection are given in appendix C. The examples given are not all-inclusive, but do illustrate the more significant accomplishments which have been realized to date.

APPENDIXES

APPENDIX A–1

Federal supply catalogs, DOD sections, published as of Jan. 1, 1954

FSC group or class	FSC group or class title	Quantity of items
24	Tractors	982
31 (less 3120)[1]	Bearings	20,773
46[1]	Water purification and sewage treatment equipment	119
54[1]	Prefabricated structures and scaffolding	301
56[1]	Construction and building materials	1,819
65	Medical, dental, and veterinary equipment and supplies	5,438
71[1]	Furniture	819
7210	Household furnishings	147
74[1]	Office machines	315
84	Clothing and individual equipment	24,388
85	Toiletries	95
87	Agricultural supplies	64
89	Subsistence	1,197
91[1]	Fuels, lubricants, oils, and waxes	874
96[1]	Ores, minerals, and their primary products	148

[1] Published since June 30, 1953.

APPENDIX A–2

Reduction in separate item identifications (July 1–Dec. 31, 1953)

	Army[1]	Navy[1]	Air Force[1]
Reduction in number of separate item identifications achieved by adoption by departments of previously published Federal catalog data	12,303	17,769	4,672

[1] The elimination of duplicates within individual activities, which is constantly being accomplished through cataloging research, is not reflected in these figures.

Conversion to and utilization of Federal catalog data (cumulative through Dec. 31, 1953)

	Army	Navy	Air Force
The number of Federal stock numbers that have replaced, for all supply purposes, all other stock numbers in the departmental supply systems:[1]			
FSC group 89, subsistence (converted as of July 1, 1953)	999	1,012	18
Other FSC groups (converted between July 1 and Dec. 31, 1953)	2,753	0	1,189
Total	3,752	1,012	1,207
The number of Federal stock numbers or, in lieu thereof, the number of Federal item identification numbers that have been incorporated into departmental supply documents and which are cross referenced to departmental or activity stock numbers	523,306	334,528	231,552

[1] Quantities are reported under this heading only when complete conversion has taken place. These quantities will increase measurably when scheduled conversion of additional areas is completed.

APPENDIX B–1

CONSOLIDATION OF SPECIFICATIONS AND REDUCTION IN ITEMS DUE TO STANDARDIZATION

Consolidation of specifications

One hundred forty-nine separate specifications have been consolidated into 94 specifications for the use of all of the military departments, bureaus, and services.

Reduction in items of supply

(1) A total of 4,785 items were eliminated as separate items for future design and procurement by joint interdepartmental action.

(2) In addition to the above, which represents reduction of items on an interdepartmental basis, the individual military departments, bureaus, and services eliminated approximately 39,332 items from their supply systems.

APPENDIX B–2

Typical accomplishments resulting from standardization operations

[These representative items were selected from the departmental reports]

Commodity	Activity responsible	Savings or other benefits
Handtools	Army—Corps of Engineers	913 line items eliminated.
Treatment and painting of industrial and construction equipment.	Army, Navy, Air Force jointly.	Presentation to industry of uniform requirements for treating and painting such equipment for all military users.
Standard hex head, machine bolts.	Army—Ordnance Corps	4,500 items eliminated; 10,500 items reduced to 6,000.
Standard nuts	do	700 items eliminated; 1,500 items reduced to 800. Clearer, more concise set of standards for designers.
Packaging of tanks	do	Improved plastic spray eliminates need for second coat and provides longer corrosion protection in shipment and storage.
Barrel hooks	Army—Transportation Corps	Increased safety. Reduction in accident rate. 2 items eliminated; 3 items reduced to 1.
Barges, deck cargo		Savings $1,179 per barge. Simplified design. $9,432 estimated saving on 8 barges being procured.
Rewinders—photo film, 16 and 35 millimeters.	Army—Signal Corps	Decrease in maintenance due to increased interchangeability. 1 percent savings in rewind service. 3 items eliminated; 5 items reduced to 2.
Electron tube test set	do	Single military specification provides replacement for older type tube tester. Estimated saving in testing time is 100,000 man-hours annually.
Handkerchief	Army—Quartermaster Corps	Specification broadened for wider competition. Savings $17,329 per year.
Record storage containers	do	Transfer to a suitable carton. Savings $50,000 a year.
Metal meat containers	do	Replaced by standard stockpots. Savings $7,200 a year.
Modified B pack (packing of nonperishable subsistence).	do	Simplified packing. Money and fiberboard savings—savings on 3 procurements of subsistence $250,000.
Shipment of wool cloth in rolls	do	Shipped to quartermaster depots without outer wrap; no damage sustained. Savings to $150,000 per year.
Canned foods	do	Modification of containers. Savings of $3,360 per million cans.
Wrap, mortuary	do	Plastic wrap instead of cotton wool. $48,110 savings.
Coat, baker's and cook's	do	Standardization on short-sleeve model coat to supersede long-sleeve model. Reduces accident hazards. Savings on new procurement based on $2.04 per old model and $1.90 per short-sleeve model estimated at $32,200.

Typical accomplishments resulting from standardization operations—Continued

[These representative items were selected from the departmental reports]

Commodity	Activity responsible	Savings or other benefits
Carriage, medicine	Armed Services Medical Procurement Agency.	$282,144 savings. Design simplified and specification broadened to permit competitive bidding.
Colors of hospital ward furniture	do	Standardized on a uniform shade of green all through military for all hospital equipment; simplifies maintenance and placing of contracts.
Chair, hospital ward metal	do	Specification broadened for wider competition. Estimated savings to date $100,870.
Container for shipment of records.	Army—Adjutant General's Office.	Specification broadened to substitute corrugated fiberboard for wood. Conservation of material. Estimated savings $50,000 per year.
Test of propellant charges, 57 and 120 millimeters.	Army—Ordnance Corps	Development of laboratory tests to replace proof firing of live shells results in estimated savings for fiscal year 1954 of $160,000.
Switchgear	Navy—Bureau of Ships	Standardized switchgear. Savings $530,000 in procurement for 1954 and $212,000 in reduced inventory.
Diesel generator sets for shipboard use.	do	Standardization of design. Savings $40,000 in current procurement.
Forging die shanks, notches, and dowels.	do	Eliminates duplication in procurement of dies for contract or shipyard use. Current estimated savings $750,000 per year. In addition mobilization day requirements are reduced by 7,200 sets of dies costing $2,000,000.
Tube expanders	do	217 items eliminated; 357 items reduced to 140. Savings $32,000 per year, and saving of 7,000 pounds of critical material.
Exhaust mufflers for internal combustion engines.	do	56 items eliminated; 84 items reduced to 28. Reduction of 20 percent in the actual number of mufflers in inventories.
Control and distribution panels for small boats and landing craft.	do	39 items eliminated; 43 items reduced to 4. Current procurement reduced 35 percent; inventory reduced 75 percent; man-hours for installation reduced 50 percent; and over 75 percent of the components on the 4 standard panels are interchangeable.
Capacitors, fixed glass dielectric	do	$50,000 savings in current procurement as result of standardization.
Packaging of sensitized photographic materials.	Navy—Bureau of Aeronautics	Adoption of standard commercial practice results in $50,000 annual savings in procurement.
Packaging of coffee	Navy—Bureau of Supplies and Accounts; Army—Quartermaster Corps.	Simplification of the packing requirement is expected to save $100,300 on the procurement of Navy's requirements of coffee for the period August 1953 to August 1954. In addition, the QMC estimated a savings of $49,068 during this reporting period as a result of using 27,000 containers of the new type.
Resistors and capacitors	Navy—Bureau of Supplies and Accounts.	Elimination of 3,644 items; 21,116 items reduced to 17,472. Reduction in storage space of 26,688 cubic feet.
Preservation of wheeled and tracked vehicles.	Navy—Marine Corps	New standard methods of preservation for storage are expected to save $100,000 annually.
Expendable pallets	Navy—Bureau of Ordnance	Adoption of expendable pallets to replace nonexpendable types, where appropriate, will result in estimated savings of $500,000 for current year.
Carbon dioxide storage unit for fire-fighting equipment.	Air Force	224 items eliminated; 225 items reduced to 1.
Containers for aerial delivery container kits.	do	Simplifying of design resulted in saving of $43,000 on a single contract.

APPENDIX C–1

INSPECTION IMPROVEMENTS SELECTED FROM DEPARTMENTAL REPORTS

A continuous scrutiny of items under procurement has revealed opportunities for increasing the lot size on which sampling inspection is performed without a proportionate corresponding increase in sample size. The greater lot size results in a decrease in the number of inspector-hours required to determine acceptability of the lot and a reduction in paperwork. For example, the lot size on fuze, PD, M52A2, has been increased from 20,000 units to 90,000 units, with an estimated annual saving of $200,000. In another instance, the lot size of 105-millimeter HE M1 howitzer shell was increased from 12,000 shells to 20,000 with an annual saving of $48,000 in a 3-month period.

The Ordnance Corps made an examination of acceptance gaging of complete rounds and cartridge case practices. This examination revealed that it was possible to so alter gage design practices as to accomplish necessary dimensional controls with less costly simple gages and to reduce the number of gages specifically designed for a particular item. The result is that ordnance inspectors possess gages which are less affected by engineering changes, yet assure functioning and provide adequate acceptance inspections. All phases of ordnance inspection gaging are being studied in an effort to extend this policy. It is forecasted that, when this program is complete, there should result a new annual savings of from $500,000 to $750,000.

As a result of internal reorganization and improved operational efficiency, there has been a reduction of approximately 3 percent in Navy inspection personnel and the abolishment of six major inspection offices.

Pipe thread checking block

This improved measuring technique has been evolved by quality control to control the accuracy of pipe thread gaging equipment. The block is being utilized by AMC activities and Air Force contractors. A savings of approximately $194,980 has been realized as a result of the new technique inaugurated by use of the block. Action has been taken by a recommendation to the Interdepartmental Screw Thread Committee of the National Bureau of Standards to standardize this method for military services by incorporation of the necessary data in Handbook H–28, Screw Thread Standards for Federal Services.

Specifications MIL–T–7274 and MIL–E–7389

Amendments to these specifications provide for a reduction in the number of aircraft engine quality control tests to be accomplished under low rates of production without detracting from the protection afforded under higher rates of production.

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